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ABSTRACT

While it is widely recognized that electoral competition can have a major influence on public spending decisions, there has been little effort to consider whether the move to multiparty elections in African countries in recent years has led to a redistribution of public expenditures among social groups. This is a question relevant for debates about African politics and for broader discussions about the effect of democratic institutions on policy outcomes. A hypothesis is developed, illustrated with a simple game-theoretic model, which suggests that the need to obtain an electoral majority may have prompted African governments to devote greater resources to primary schools. The proposition is tested using panel data on electoral competition and education spending in 35 African countries. Results show that democratization has indeed been associated with greater spending on primary education, and that government subject to electoral competition has shifted resources towards primary schools, away from other items in the education budget. These findings are robust to controls for unobserved country effects, and they are also supported by evidence from recent country cases. (Contains 40 references, 31 notes, 2 figures, and 5 tables.) (Author/BT)

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Democracy and Education Spending:

Has Africa's Move to Multiparty Elections Made a Difference for Policy?

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While it is widely recognized that electoral competition can have a major influence on public spending decisions, there has been little effort to consider whether the move to multiparty elections in African countries in recent years has led to a redistribution of public expenditures between social groups. This is a question relevant both for debates about African politics and for broader discussions about the effect of democratic institutions on policy outcomes. I develop a hypothesis, illustrated with a simple game-theoretic model, which suggests that the need to obtain an electoral majority may have prompted African governments to devote greater resources to primary schools. I test this proposition using panel data on electoral competition and education spending in thirty-five African countries. The results show that democratization has indeed been associated with greater spending on primary education, and that governments subject to electoral competition have shifted resources towards primary schools, away from other items in the education budget. These findings are robust to controls for unobserved country effects, and they are also supported by evidence from recent country cases.

1. Introduction

At the time of the African democracy movements of the early 1990s opinions varied widely about the effect of democratization on economic performance and on economic policy. While some authors predicted that democracy would be associated with major economic changes, other observers were less optimistic, suggesting that the adoption of the formal trappings of multiparty democracy would have only a limited impact on policy choices made by governments. With several years of hindsight, we can begin to ask whether and how policies adopted by elected African governments have differed from those pursued by authoritarian regimes. This is an important question for scholars interested in investigating whether a shift to democratic institutions can have a significant impact on policy, even in environments where democratic norms may be imperfectly respected and where institutions may be unstable. In this paper I ask whether the move to multiparty electoral competition that took place in many African countries during the 1990s has prompted governments to spend more on education, and more on primary education in particular. I focus on education spending both because it is a major component of overall social spending, and because it has been a prominent subject of discussion in a number of recent African election campaigns. As a result, this paper contributes to a growing body of work that investigates how the presence of democratic institutions in developing countries influences government spending in specific areas, and in particular with regard to social spending.[1] My theoretical argument follows previous work by emphasizing how electoral competition alters policies by making rulers more responsive to the demands of the electorate. In addition, I argue that electoral competition can alter the relative influence of different social groups, and thus lead to a reallocation between different categories of social spending.

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[1] See in particular Avelino, Brown and Hunter (2001), Brown and Hunter (1999), Fardmaneshi and Habibi (2001), and Kaufman and Segura-Ubiergo (2001).

The logic underlying my hypothesis is that contested elections may have prompted African governments to be more responsive to the demands of the rural groups that form the majority of citizens in almost all African countries. Under authoritarian regimes, in contrast, rulers will need to be relatively more responsive to urban groups, which can present a more credible threat of political unrest, following Bates (1981). There are strong reasons to believe that when compared with urban groups, rural groups in Africa are more concerned with spending on primary education relative to secondary and tertiary education. I develop my argument by drawing implications from literature on the politics of economic policy in African countries under authoritarian rule, compared with observations about the possible effects of electoral competition on political participation in Africa. I then formalize the argument using a simple game-theoretic model. One objective of this modeling exercise is to show that it is not necessary to assume that election outcomes are respected in order for multiparty democracy to have an effect on policy outcomes.

My modeling approach also helps to identify the conditions under which an increase in political competition in African countries *might not* lead to increased spending on primary education. For example, increased electoral competition will have no impact on education spending if African voters have little means of subsequently holding their elected representatives accountable by voting out of office those who fail to keep promises. Likewise, if education is not a salient issue with the electorate when compared with other concerns, then the introduction of democracy will have little effect on spending in this area.

Evidence from individual country cases suggests that in several recent instances electoral competition has prompted governments to devote greater budgetary resources to primary education. The Ugandan President's decision in 1996 to establish free universal primary education was made in the middle of an election campaign. In Tanzania and in Kenya a similar political context has prompted Presidents to announce a move to free universal primary education. I test my argument using time-series cross-section data covering 35 African

countries over the period 1981-1996. The results show that when they are subject to multiparty competition, African governments have tended to spend more on education, and more on primary education in particular. They also show that multiparty competition is associated with a shift in resources *within* the education budget, towards primary schools and away from secondary schools and universities. These results are statistically significant in OLS estimates and in fixed effect estimates which control for unobserved country effects. My results are robust to the inclusion of a number of control variables, and I also consider a number of potential biases including serial correlation, sample selection bias, failure to control for electoral fraud, and the possibility that the observed effect of electoral competition may vary according to the type of electoral system (PR vs. majoritarian) . In my estimates, the effect of electoral competition is also substantively significant. A move from an unelected government to one elected in multiparty competition is estimated to result in an increase in education expenditures by 1.4% GDP in the OLS estimates.

In the remainder of the paper I first proceed in section 2 by considering theoretical arguments about the link between electoral competition and public spending. Section 3 then considers evidence from several recent country cases. Sections 4 and 5 then present cross-country data on education expenditures and political competition, and Section 6 presents panel data estimates of the effect of electoral competition on education spending. Section 7 considers alternative specifications, omitted variables, and other robustness issues. Section 8 concludes

2. Electoral competition and education spending

I begin from the basic assumption that governments in political systems with competitive elections face fundamentally different threats to their rule compared with autocratic governments. In an autocracy, the principal risk for a leader is that he or she will be overthrown by force. In countries where there are free elections contested by multiple candidates, rulers may still fear losing office through force, but they also need to anticipate the possibility of being

voted out of office. In an autocracy, leaders will logically need to pursue policies that will satisfy those groups that can credibly threaten to use force to obtain what they want. When there are competitive elections, in contrast, rulers are more likely to face incentives to pursue policies that satisfy a majority among the electorate.[2]

In African countries where governments are not obliged to compete in free elections, it is commonly argued that urban groups have found it easier to organize and protest against government policies than do those who live in rural areas. In a seminal contribution, Bates (1981) argued that rural groups in Africa face greater costs of collective action because they tend to be distant from a country's capital, they are geographically separated, and they are frequently divided by language and/or ethnicity. Urban groups in contrast, have the advantage of being more geographically concentrated. According to Bates, differential costs of collective action between urban and rural groups helped explain why the economic policies adopted by African governments during the 1960s and 1970s tended to exhibit an urban bias. So, for example, governments taxed agriculture while subsidizing imported food items consumed largely by urban groups.[3]

While Bates (1981) did not directly consider education spending, his theory has clear predictions for this area of government policy. To the extent that urban groups in Africa tend, on average, to have more years of schooling than their rural counterparts, they are more likely to be concerned about government spending on secondary schools and universities, as well as spending on primary schools. Rural groups, on the other hand, should place much greater weight on primary school spending alone. When one turns to explaining which of these African social groups will have more influence on education spending, it is important to note that university students in a number of African countries have historically been one of the groups

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[2] See Przeworksi, Stokes, and Manin (1999) for a recent review of elections and accountability.

[3] This argument about an urban-rural divide may be modified if there are possibilities for transfers within families between urban and rural dwellers.

that has been most willing to demonstrate publicly against governments whose policies they oppose. The same can hardly be said for primary school students. These factors suggest that education spending in autocratic African countries will be biased against primary education. Evidence of skewed education policies in African countries is readily available; during the 1980s the ratio between public education spending per university student and spending per primary school student was significantly higher in Sub-Saharan Africa than in other regions.[4] Existing evidence also suggests that there is a significant urban-rural gap with regard to levels of primary school enrollment in African countries.

In the last fifteen years a number of African countries have moved away from autocracy and towards a system of selecting governments through elections. Analysts of African politics have for some time debated whether democratization is likely to lead to significant changes in economic policy and in economic performance. Callaghy (1993) launched an early caution against the assumption that political reform in African countries would necessarily result in fundamental changes in economic policies. Herbst (1993) has highlighted the continuing obstacles to political mobilization of rural African groups in a democratic context.[5] More recently Bayart (2000) has taken a pessimistic view, suggesting that the (re)introduction of the formal trappings of democracy in African countries has had little real impact apart from exceptional cases such as Mali. Van de Walle (2001) has arrived at a more nuanced conclusion, arguing that democratization in Africa has not yet resulted in a fundamental shift in the types of political pressures that African leaders face, yet it may nonetheless have initiated more long-term changes in the politics of economic decision making. Finally, recent cross-country empirical

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[4] Pradhan (1996) shows that this ratio stood at 65.3 for the average African country in 1980 and 44.1 in 1990. In Latin America the relevant figures were 8.0 and 7.4 for 1980 and 1990 respectively. In South Asia the relevant figures were 30.8 and 14.1 for 1980 and 1990 respectively.

[5] See also the discussion in Lewis (1996) and Widner (1993) for an in-depth study of rural political mobilization.

studies by Bates and Humphreys (2002), Ferree and Singh (1999) and Block, Singh and Ferree (2001) have shown that there do appear to be differences in policy between African governments that are subject to multiparty competition and those that are not subject to competition.[6]

While democratization has clearly not yet to lead to a wholesale reorientation of economic policy in African countries, if we are to determine whether electoral competition has had *any* impact it may be more productive to focus on changes in individual economic policy areas. Given that the majority of electors in almost all African countries live in rural areas, if we follow the arguments I have made above, then one would expect politicians to become more responsive to the demands of rural groups when they are subject to electoral competition. This could include meeting demands for increased primary education spending. To the extent that demands for primary education are met by increasing education expenditures rather than reallocating priorities within the education budget, one would expect to observe an increase in overall education spending as well.

Any argument that democracy will lead to higher levels of government spending on primary education in African countries does depend upon several assumptions which may or may not be fulfilled. Education spending must be a salient issue for voters, candidates must

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[6] Debates about the effect of democratization on economic policy have, of course, not been limited to African countries. Authors like Przeworksi and Limongi (1993) have cautioned against making sweeping generalizations about political regime type and economic performance. More recently, several studies have shown that democratic institutions do in fact appear to be correlated with at least one area economic policy, as democratically elected Latin American governments spend more on health and education than do their authoritarian counterparts (Avelino, Brown and Hunter, 2001, Brown and Hunter, 1999, and Kaufman and Segura-Ubiergo, 2001). Fardmaneshi and Habibi (2001) has shown, based on a broad sample of developing countries, that democratic governments have a greater tendency to protect social expenditures during periods of fiscal austerity.

face incentives to implement promises regarding education spending once elected, and voters must have information at their disposal which allows them to judge whether promises have been kept. Finally, it must not be possible for incumbents to "buy off" potential opponents. One of the purposes of developing the formal model in the next sub-section is precisely to identify these assumptions and to make them explicit.

A simple formalization of the argument

Consider a society divided into two types of voters: those from rural areas and those from urban areas, with the rural group forming a majority.[7] In this society decisions must be made between devoting available revenues to primary education p to university education u and to a third category of expenditures x. The distribution of expenditures must meet an exogenous revenue constraint (normalized to unity) as presented in equation 1 below.[8]

Voters from rural areas prefer available revenues to be spent on primary schools, and they have a standard quadratic loss function, as presented in equation 2. Voters from urban areas prefer revenue to be spent on university education, and they also have standard quadratic loss function. The incumbent's utility depends upon both primary school spending, secondary spending, and on the resources devoted to the third category of expenditures. I keep the definition of this third category of expenditures deliberately vague in order to make the model applicable either to corruption (in which case x would be personal consumption) or to the

[7] I use the distinction between "urban" and "rural" here, but in principle the argument could apply to any two groups provided that one is in the majority, the other can pose a more credible threat of unrest, and the two groups have different preferences over spending.

[8] This is a reasonable assumption for African governments which in the short-term generally have little capacity to increase revenue collections. Fluctuations in terms of trade do lead to very significant year to year variations in African government revenues, but these are in almost all cases exogenously determined.

financing of some sort of government activity from which rural and urban voters derive no utility.

$$p + u + x = 1 \qquad (1)$$

$$L_{rural} = (1 - p)^2 \qquad (2)$$

$$L_{urban} = (1 - u)^2 \qquad (3)$$

$$L_{incumb} = (1 - p)^2 + (1 - u)^2 + (1 - x)^2 \qquad (4)$$

I distinguish between two different scenarios for policy choice. In the case *without* electoral competition the incumbent must face the risk of being overthrown if urban voters are sufficiently dissatisfied with the chosen spending policy. If urban voters choose to revolt, then with probability q their revolt is successful and all revenues are spent on university education. With probability $1-q$ the revolt fails, urban voters receive disutility of 1, and then the incumbent's spending policy is maintained. I assume that all players observe the probability of successful revolt q. In the case *with* electoral competition the incumbent still faces the risk of being overthrown through violence, but he or she now also faces a challenge from another candidate.[9] For simplicity, I assume that the challenger has the same loss function as the incumbent. Since rural voters are assumed to make up the majority, the expenditure proposal that minimizes their expected loss will win the election. In the case where challenger and incumbent propose the same policies, the election is decided by a coin toss. The sequence of play in the two scenarios is as follows:

[9] Election outcomes where there is a threat of unrest have previously been modelled by Ellman and Wantchekon (2000)

Without electoral competition	With electoral competition
1. The incumbent chooses a distribution of expenditures	1. The incumbent proposes a distribution of expenditures
2. Urban voters choose whether to revolt.	2. A challenger proposes a spending policy.
	3. An election occurs and the winner's proposal is implemented.
	4. Urban voters choose whether to revolt.

I begin by identifying the sub-game perfect equilibrium in the case without electoral competition. Here the preferences of rural voters are irrelevant for the incumbent, because there is no risk of being unseated in the election, and rural voters do not possess an option of revolting against spending policies. As a result, at stage 1 the incumbent faces two options. The first possibility is to minimize his or her loss subject to the revenue constraint (in which case the incumbent will divide expenditures evenly between the three items $p = u = x = \frac{1}{3}$). Alternatively, the incumbent can compromise by offering urban voters their reservation payoff (the minimum level of spending on universities necessary to dissuade them from revolting) and then distribute the remaining revenues between primary schools and "other" spending. Given that the urban group's expected loss from revolting is 1-q, their reservation constraint will be satisfied as long as $u \geq 1-(1-q)^{\frac{1}{2}}$. This constraint is actually satisfied by the allocation $u = \frac{1}{3}$ as long as $q \leq \frac{3}{4}$, and as a result, for this range of probabilities the incumbent will not need to compromise. When the probability that revolt will succeed is high ($q > \frac{3}{4}$) the compromise strategy would involve allocating the minimum university expenditures necessary to satisfy this constraint ($u = 1-(1-q)^{\frac{1}{2}}$). The incumbent would then divide remaining expenditures evenly between primary schooling and other spending $p = x = \frac{1}{2}(1-q)^{\frac{1}{2}}$. The ruler will prefer to pursue the compromise strategy as long as the following inequality is satisfied. The right hand side of the inequality represents the expected loss for the incumbent from not compromising

while the left hand side represents the loss from compromising by satisfying the urban group's reservation constraint.

$$2(1-\tfrac{1}{2}(1-q)^{\frac{1}{2}})^2+1-q<\tfrac{4}{3}(1-q)+2q \qquad (5)$$

The inequality in expression (5) is in fact satisfied for all $q>\frac{3}{9}$, so whenever the probability that revolt will succeed is high, the ruler will adopt the compromise strategy.[10]

In the case with electoral competition, incumbent politicians face different incentives. They still face a potential risk of being unseated by a revolt, but in addition they face the risk of losing the election. The election will be won by the candidate whose proposal provides a lower expected utility loss for rural voters, given that they are in the majority. The key question, then, is whether at stage 3 rural voters would prefer a proposal that gives them their ideal policy $p=1$, or alternatively, whether they would prefer a compromise proposal that provides urban voters with their reservation payoff and then devotes remaining revenues to primary schools. The compromise proposal would involve setting $u=1-(1-q)^{\frac{1}{2}}$ and then devoting remaining revenues to primary schools, so $p=(1-q)^{\frac{1}{2}}$. Rural voters will prefer the compromise proposal as long as the following inequality is satisfied. The left hand side of the inequality represents their loss from compromising while the right hand side shows their expected loss from not compromising.

$$(1-(1-q)^{\frac{1}{2}})^2<(1-q)(0)+q \qquad (6)$$

This inequality is satisfied for all $0<q<1$, and as a result the policy proposal that minimizes the expected loss of rural voters is $p=(1-q)^{\frac{1}{2}}, u=1-(1-q)^{\frac{1}{2}}, x=0$. We can then

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[10] The fact that revolt never occurs in equilibrium here is an artifact of the assumption of perfect information about p. If I assumed more realistically that either the incumbent or urban voters are uncertain of the value of p (or both), it would be possible for revolt to occur in equilibrium. See Ellman and Wantchekon (2000) and Wantchekon (1999) for considerations of imperfect information and revolt.

compare the equilibrium expenditure outcomes (which are summarized in the table below) with and without electoral competition. The model yields three testable hypotheses.

Hypothesis 1: Primary school spending is higher in the case with electoral competition. This statement holds for all values of q. When $q > \frac{5}{9}$ primary school spending is exactly twice as high under electoral competition as in the case without a multiparty election. When $q \leq \frac{5}{9}$ primary school spending is also higher when there is electoral competition.

Hypothesis 2: The share of the education budget devoted to primary education is always higher when there is electoral competition. If $q \leq \frac{5}{9}$ this share increases from one-half to $(1-q)^{\frac{1}{2}}$. If $q > \frac{5}{9}$ this share increases from $\frac{1}{2}(1-q)^{\frac{1}{2}}/(1-\frac{1}{2}(1-q)^{\frac{1}{2}})$ to $\frac{1}{2}(1-q)^{\frac{1}{2}}$.

Hypothesis 3: The overall education budget will be larger when there is electoral competition. This is true because competition between incumbent and challenger will prompt them not to propose spending on non-education items.

Allocation of Spending under Different Scenarios

{Primary, University, Non-education}

	Without competition	**With electoral competition**
$q \leq \frac{5}{9}$	$\left\{\frac{1}{3},\frac{1}{3},\frac{1}{3}\right\}$	$\left\{(1-q)^{\frac{1}{2}},1-(1-q)^{\frac{1}{2}},0\right\}$
$q > \frac{5}{9}$	$\left\{\frac{1}{2}(1-q)^{\frac{1}{2}},1-(1-q)^{\frac{1}{2}},\frac{1}{2}(1-q)^{\frac{1}{2}}\right\}$	

The model I have presented here is obviously a very simplified description of the electoral process in any African country. However, precisely because I have made the simplifying assumptions explicit, the model can help identify the conditions where increased electoral competition *will not* result in increased spending on primary schools. First of all, the result above depends upon the assumption that if elected, both the incumbent and the

challenger will have an incentive to implement the set of policies proposed during the election campaign. This is most likely to occur when a leader seeks to implement a promise in order to subsequently be re-elected by the electorate, or to see his party returned to power. The next section provides an example of this type of incentive mechanism in Uganda. However, if leaders care little about the future (they have short time-horizons), one could observe a succession of promises by candidates to increase spending on primary schools, followed by failure to deliver on this promise.[11]

A second condition under which electoral competition will not influence education spending is if other issues dominate voters' choice of candidate. The simple framework here assumes that the only salient issue is how to divide up expenditures between primary schools, higher education, and other consumption. This does not imply that education has to be the most prominent issue in an electoral campaign in order for democracy to result in higher spending in this area, but the issue does need to have at least some salience with voters. The next section contrasts recent experience in Uganda, where primary education has been a highly salient issue with the electorate, with Malawi where other issues, and in particular regional divisions, have dominated voting.

Finally, the model above also assumes that it is impossible for the incumbent to coopt the challenger with side payments. If the incumbent could transfer part of x to the challenger in exchange for the challenger not declaring a candidacy (or not waging a serious campaign), then it might be possible for both incumbent and challenger to improve on their expected loss. There is clear evidence that such collusion between incumbents and challengers has taken place in some African countries.[12]

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[11] See Fearon (1998) and Ferejohn (1986) for a discussion of retrospective voting rules that could be used to enforce commitment to a campaign promise.

[12] In Gabon, the President, Omar Bongo, has granted sizeable public allowances to all opposition parties, as well as other perks such as four-wheel drive vehicles in exchange for limits on competition. See

What the above discussion suggests then is that increased electoral competition may be associated with greater spending on primary education, but that this outcome depends on several assumptions about the democratic process that may not always be fulfilled. As previously argued, however, the model does not assume that outcomes of democratic elections are necessarily respected, since one group here retains the option of revolt. This is an important point, because it is implausible to assume otherwise for many African countries. Nor does the model rely on implausible assumptions about the information available to voters for monitoring whether campaign promises are kept. African rural voters may not necessarily have access to full statistics on public spending on education, but they are able to easily observe whether new schools are built in their district, whether new teachers are hired, and especially, whether fees for schooling are reduced.

One final theoretical issue involves the possibility that the model I have presented here could apply to other world regions. I have framed the model in terms of a particular division between African rural and urban groups that was emphasized by Bates (1981). One can nonetheless identify a more general underlying hypothesis – in any society that moves towards more free and open electoral competition one should expect that this would be accompanied by a reorientation of public spending towards those groups which posts a potential electoral threat and which did not previously pose a credible threat of influencing a government through non-electoral means. This would depend upon the above assumptions about salience of a particular issue and *ex post* incentives for politicians being fulfilled.

3. Evidence from recent African elections

Though the main empirical tests presented in this paper are based on cross-country data, more detailed evidence from individual African election campaigns can also be used to

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Stephen Smith, "Omar Bongo propose à l'opposition gabonaise la 'gestion collective' de l'État", *Le Monde*, January 21, 2002.

demonstrate that primary education can be a salient issue, and that electoral competition can prompt governments to reorient resources towards primary schools. This section briefly reviews recent experience in Uganda, Malawi, Tanzania and Kenya that supports the subsequent statistical results and which also helps identify important differences between countries that the quantitative tests might not capture. The contrast between Uganda and Malawi in particular suggests that when voters split sharply along regional lines, election winners may have less of an incentive to deliver on national issues like universal primary education, precisely because it is less salient to voters.

Uganda since 1996 is a clear case of an African country in which the establishment of multi-candidate elections has helped result in a reorientation of government spending towards primary education.[13] Despite the atypical aspect of Uganda's "no-party democracy", where political parties exist but cannot officially campaign for candidates, the country's 1996 presidential election was a hotly contested one, which saw the incumbent, Yoweri Museveni, challenged by Paul Ssemogerere, the leader of Uganda's Democratic Party. Though most observers before the election believed Museveni stood a good chance of winning, he was not expected to walk away with the election.[14] As part of a series of manifesto commitments, Museveni promised if elected to implement a Universal Primary Education (UPE) program that would abolish primary school fees for four children in every family.[15] Though this promise was not initially intended to be the centerpiece of Museveni's campaign, it received a very favorable response from the electorate. The popularity of the UPE program provides one plausible explanation why Museveni was able to win the election by a large margin, attracting 74% of the vote, and even outpolling Ssemogerere in the opposition candidate's own region of Buganda.

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[13] This discussion of Uganda draws on Stasavage (2003).

[14] According to one report, several foreign diplomats in Kampala predicted Museveni would win 60% of the vote, and a pre-election poll forecast a similar outcome. See Ottemoeller (1998) p.100.

[15] See Yoweri Museveni, "Tackling the Tasks Ahead", 1996 election manifesto.

This was certainly the conclusion drawn by many of Museveni's close advisors, as they subsequently urged Ugandan Ministry of Finance officials to find the necessary funds to finance the UPE program, arguing "we won the election because of the UPE pledge, so we have to come up with the money for it.[16] Since 1996 the Ugandan government has significantly reoriented expenditures toward primary education. Overall public education expenditures increased from 20.2% of recurrent government expenditures in the three years before UPE to an average of 26.3% of expenditures in the three years after the program was announced.[17] There is clear evidence that the UPE program has contributed to Museveni's overall popularity, as 87% of the Ugandans surveyed in 2000 by the Afrobarometer research project reported that their government was handling education issues "fairly well" or "very well" (Bratton, Lambright, and Sentamu, 2000). Not surprisingly given this positive reaction, when beginning his 2001 re-election campaign, President Museveni chose to remind voters that he had successfully delivered on his 1996 UPE pledge. [18]

In Malawi in 1994, as in Uganda in 1996, the winning candidate in a presidential election moved soon after his victory to make good on a pledge of abolishing primary school feels. The Malawian government also moved quickly to spend more on primary education in order to compensate schools for the loss of fees. Primary education spending as a percentage of GDP jumped from 1.5% in 1994 to 2.6% in 1995. However, unlike in Uganda, the Malawian government failed to sustain this increased spending, in particular after 1999 when education spending dropped dramatically.[19] As a result, the move towards multiparty competition in Malawi, which saw Bakili Muluzi win the first multiparty elections in 1994, has not resulted in a

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[16] Interviews with former Ugandan officials, December 2002.

[17] based on World Bank data.

[18] *The New Vision*, Kampala, March 9th, 2001.

[19] See "Malawi: Public Expenditures, Issues and Options", World Bank, Public Expenditure Review, September 200.

durable reorientation of public expenditures towards primary education. There appear to be two possible explanations for this outcome. First of all, Malawi in the late 1990s suffered from much greater macroeconomic instability than Uganda. This complicated any attempt to increase education spending. Second, one might also argue that precisely because voting in presidential elections in Malawi has been highly polarized along regional lines, President Muluzi faced less of an incentive to deliver on this issue in order to be reelected. In the 1994 presidential contest Muluzi won 78% of the vote in Malawi's southern region, but only 27.5% of the vote in the central region, and only 4.5% of the votes in the North.[20] In Uganda in 1996 there was also a clear regional pattern of voting, with President Museveni, receiving his highest share of votes in the west of the country, but Museveni also won over 50% of the vote outside his home region. In contrast, the Malawian results suggest that regional affiliation almost completely determined choice of candidate. Given the regional pattern of voting in Malawi, which remained very similar in the 1999 election, it would seem unlikely that either of President Muluzi's election victories have depended upon his stance on national issues like primary education spending.[21]

In addition to the Ugandan and Malawian examples, there is also more recent evidence from Tanzania and Kenya that electoral competition can help lead to a reorientation in policy priorities towards primary education. It is too early to judge to what extent either of these cases represents a true reorientation in policy – that will only be made clear if there is a sustained increase in public spending on primary education to compensate for the abolition of fees – but it is nonetheless interesting to note that in both cases the promise of free primary education clearly struck a chord with the electorate.

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[20] Results reported by Wiseman (2000). See Posner (1995) and Chirwa (1998) for discussions of regionalism in Malawian politics.

[21] One could, of course, still argue that he had a strong incentive to deliver services like public education to voters in his own home region, but the focus here is on the extent to which electoral competition generates a reallocation of spending on a national basis.

In Kenya, during the December 2002 election campaign the National Rainbow Coalition of Mwai Kibaki made abolition of primary school fees a manifesto commitment. In contrast, the candidate of Kenya's ruling KANU party claimed that Kibaki would never be able to find the money necessary to deliver on his promise.[22] While Kibaki's eventual victory was attributable above all to dissatisfaction with Kenya's outgoing President, Daniel Arap Moi, during the course of the campaign one observer suggested that Kibaki's promise of free primary education drew more applause from voters than any other issue.[23] After his election Kibaki waited only a few days after assuming power before making good on his promise, a decision that drew heavy press coverage.

A similar sequence of events occurred in Tanzania. During the campaign leading up to the October 2000 presidential elections, a number of candidates promised to reduce or abolish fees for primary school attendance. Among these was the incumbent, Benjamin Mkapa, who was successfully reelected. A few months after his election victory, President Mkapa announced that his government would abolish all primary school fees.[24] He subsequently made his plans more concrete by saying that the Tanzanian government would increase education's share of the recurrent budget to 25% and that 62% of this sum would be devoted to primary education.[25]

4. Data on education spending

In order to test my three hypotheses about democracy and education spending on a cross-country basis, I use data on total government spending on education, government spending on primary education, and the share of the education budget devoted to primary

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[22] "Narc answers Uhuru over remark", *East African Standard*, December 8th, 2002.

[23] See "Primary Schools in Kenya, Fees Abolished, Are Filled to Overflowing", *New York* Times, 7 January 2003.

[24] *Sunday Observer* (Dar es Salaam) April 1, 2001.

[25] *The Guardian*, Dar es Salaam, November 1, 2001.

schools. Data on the different components of education spending has been compiled by UNESCO for a number of African countries.[26] These data are also reported in the World Bank's *World Development Indicators*. Given that there is little if any African education spending data available for the years before 1981, in this study I have concentrated on the period 1981-96. I have compiled data on total education spending for 35 countries for which the average number of annual observations available over the period is 10. Likewise, data on primary education expenditures is available for 33 countries with an average of 6 annual observations over the period. Given the larger number of missing observations for the data on primary education, it should be noted that overall education expenditures are actually a very good proxy for primary education expenditures (the pairwise correlation between the two figures is 0.82).

Figure 1 presents African averages for overall public spending on education as a share of GDP, in addition to public spending on primary education as a share of GDP. As can be seen, after a decline during the 1980s, in the early 1990s African governments increased their outlays for education and for primary education in particular. While Figure 1 is useful for presenting cross-country trends, it masks the fact that there has also been considerable variation in patterns of education spending across countries. Table 1 presents summary statistics for four key measures of education spending. For each of these four variables, between-country variation is quite significant.[27]

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[26] UNESCO *Statistical Yearbook*.

[27] It should be noted that cross-country data on education statistics may be subject to error. Behrman and Rosenszweig (1994) have argued this for enrollment data collected by UNESCO. In order to consider this possibility, I compared the UNESCO data for overall public spending on education with that reported by the IMF in its *Government Finance Statistics* publication, as well as with data collected by Mingat and Suchaut (2000). The UNESCO data are in fact very highly correlated with data from both of these other sources, and there are almost no cases of large discrepancies.

5. Measuring electoral competition

Researchers in recent years have compiled a number of different cross-country indices of democracy, political rights, and political competition. It has become increasingly frequent for economists and political scientists to include these political variables in cross-country regressions on subjects such as the determinants of economic growth. Two of the most frequently used indices of this sort are the Gastil indices of political and civil liberties. However, as emphasized by Bates (1995), the Gastil index remains a very uncertain tool for quantitative research, because the methodology used to compile it is not made public. Another problem is that the Gastil indices and other indices, such as the Polity III measure of democracy, appear to measure very broad features of a country's political system (democracy vs. authoritarianism).

Fortunately for the purposes of this study, a Harvard-based group of researchers has compiled specific data on the openness of recruitment of chief executives and legislators in African countries.[28] This data set is highly correlated with existing measures of electoral competition, such as the Polity III dataset's measure of the openness of executive recruitment,

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One additional data issue concerns donor financing. The UNESCO data on education spending is based on a questionnaire distributed to governments on an annual basis. Until very recently the questionnaire has not asked governments to distinguish between education spending that is financed by revenues and education spending financed by donors. For the majority of African countries in the sample this may not pose an issue, as a recent World Bank report (2001) has suggested that "official development assistance represents only 3-4 percent of total expenditure on education in Africa". For some countries, however, and notably post-conflict states, donor-financed education expenditures may represent up to half of all public expenditures on education. If in filling out their UNESCO questionnaires governments such as these did not include donor-financed education spending in their calculations, it would introduce a degree of measurement error.

[28] See Bates (1995) as well as the recent papers that have used this dataset including Bates and Humphreys (2002), Block, Singh and Ferree (2000), and Ferree and Singh (1999).

but it has the advantage of being constructed from objective indicators.[29] For executive recruitment the data collectors asked five questions relevant to the degree of competitiveness:

1. Is there a chief executive?
2. Was the executive elected?
3. Was the executive the only candidate in the election?
4. Were multiple political parties allowed to contest the election?
5. Did candidates from more than one party contest the election?

These responses provide indications about the degree of political competition, and they are ideally suited for testing my theoretical argument. In practice, in the 35 country sample used in this study there are three groups of countries in terms of levels of electoral competition. In 28% of country-years there is no electoral competition, meaning that the country had an executive but the executive was not elected. In a further 37% of country-years there was an executive who was elected, but only a single candidate contested the election (or in a handful of cases multiple candidates from the same political party contested the election). Finally, in a further 35% of country-years the executive was elected and candidates from multiple political parties stood in the election.[30] Given this distribution, I have created three dummy variables to indicate the level of electoral competition: *No electoral competition*, *Single-party competition*, and *Multiparty competition*. It is important for purposes of interpretation to note that these variables are coded so that a country where the executive is elected in a multiparty contest is given a value

[29] The pairwise correlation coefficient with the relevant Polity III measure is 0.72 for African countries.

[30] Uganda is one country that is difficult to classify within this scheme. Even though political parties are formally banned from supporting individual candidates in Uganda, the fact that it has been widely recognized in presidential elections which candidates are favored by which party argues in favor of classifying Uganda as having multiparty competition, despite the legal restrictions. Due to missing data, no data from Uganda post-1996 was used in the regressions for this paper.

of 1 for the variable *Multiparty competition* but a value of 0 for the variable *Single-party competition*. This ensures that the two variables are uncorrelated when entered into the regression. The hypothesis developed in Section 2 suggests that education spending, and in particular primary education spending, will be higher in countries with multiparty competition. In contrast, the theory presented in Section 2 provides no specific argument why countries with single-party competition should have different levels of education spending from those countries without any electoral competition (unelected executives). The *Single-party competition* variable in the next section's regressions is included primarily as a control. As can be seen in Figure 2, the percentage of African countries with multiparty competition increased very significantly during the 1990s. Table 5 provides a presentation of individual country-years included in the regressions, together with the reported level of electoral competition.

As a final point, it should be emphasized that those who collected the electoral competition data used in this paper made no claim to control for the many informal and formal restrictions on competition that may be used even by governments that officially allow multiple candidates from multiple parties to contest elections. As a result, there are a number of states that are classified as having multiparty competition here, even if it is clear that competition was limited in practice. Unfortunately, no cross-country data is available based on objective indicators that could control for these additional restraints. In section 7 I return to this issue by providing several reasons to believe that even if the data I use misclassifies some countries as having open political competition, the results presented in Section 6 are not biased in favor of finding support for Hypotheses 1-3.

6. Panel estimates of the determinants of education spending

In order to explore the relationship between electoral competition and education spending, I estimated a series of cross-section time-series regressions for African countries using annual data for the period 1981-1996. To test my three hypotheses I considered three

dependent variables: (1) overall public spending on education, (2) public spending on primary education, and (3) the share of the education budget devoted to primary schools. In addition, I use two alternative measures of the former two variables: spending expressed in percent of GDP, and spending expressed as a percentage of total government spending. Measuring education spending in percent of GDP would seem to be an appropriate indicator of the resources devoted by government to a particular activity. However, there may be several problems with this method of measurement. For one, it ignores the fact that for exogenous reasons, some governments may have access to lower levels of revenue than others. Second, when spending variables are expressed relative to GDP, then changes in relative prices in the economy (between the non-tradeables and tradeables sectors) may lead to apparent changes in spending without a government actually altering its budgetary priorities. Given that there were significant shifts in relative prices in a number of African economies during the sample period, this may be a real concern. To take account of both of these possibilities, the regressions in Tables 2 and Table 3 also consider determinants of education spending when this variable is expressed as a share of total government spending.

In the regressions in Tables 2-4, each of the spending variables is regressed on several independent variables, including the indicator variables for *Single-party competition*, *Multiparty competition*. Since the base group here is countries without electoral competition, the *Single-party competition* and *Multiparty competition* variables then capture estimated differences relative to this group. As previously mentioned, the hypothesis developed in Section 2 pertains to countries with multiparty competition in particular. I also included dummy variables for elections in the previous, current, and following year, based on the plausible idea that governments may have incentives to spend more on education during electoral periods in particular. While the number of obvious additional control variables to use in these regressions is limited, I also included the log of per capita GDP, based on the conjecture that governments in richer countries may tend to spend a greater share of their national income on education, while governments in richer

countries are also likely to devote a smaller share of their total education spending to primary schools. Unfortunately, no cross-country data is available on the salience of education as an issue, which was found in Sections 2 and 3 to be an important consideration. Finally, I preferred a static specification here, that does not include a lagged dependent variable, for several reasons. First of all, I am interested foremost in identifying the long-run effects of changes in political institutions. Second, due to the large number of missing observations, inclusion of a lagged dependent variable, would have significantly reduced the sample size. The discussion of robustness in Section 7 considers whether my results may be biased by serial correlation of the error terms, given that I have not included a lagged dependent variable in the specification.

I also include total overseas aid as a control, based on the fact that when negotiating structural adjustment packages, donors in recent years have frequently suggested that governments should privilege expenditures on key services like education, and in particular primary education. Rather than arguing that aid is directly allocated to education expenditures, given the earlier observation that direct donor financing of public education in Africa was limited during this period in most countries, the argument here is that an increased reliance on donor financing may prompt a government to pursue expenditure objectives advocated by donors. The variable *Overseas aid* represents total overseas development assistance in percent of GDP.

The regressions reported in Table 2 test Hypothesis 3 by considering determinants of total government spending on education. Regression (1) is a pooled OLS estimate which shows that both single-party and multiparty political competition are positively and significantly correlated with total government spending on education. The coefficient on *Multiparty competition* is larger than that for *Single-party competition*, however. A move to multiparty competition is estimated to result in an increase of total education spending by 1.4% of GDP. Spending on education does not seem to be significantly different during electoral periods

according to these estimates. A set of dummy variables for unobserved year effects was not jointly significant in this specification, and so it was excluded (as was the case for all other regressions in the study).

Regression (2) is a fixed effects model that controls for unobserved country-specific correlates of education spending. The coefficients on both electoral competition variables remain highly significant, although the coefficient on *Multiparty competition* is now smaller in magnitude than in the OLS regressions. The coefficient on *Single-party competition* is now actually larger than in the OLS estimates. The election variables remain insignificant, and the coefficient on *Overseas aid* is actually negative and highly significant.

Regressions (3) and (4) repeat the procedure while using the dependent variable measured as a share of total government expenditures. The results are very similar to those reported for regressions (1) and (2). In the pooled OLS regression the *Multiparty competition* dummy variable is positive and highly significant. A government subject to multiparty competition is estimated to devote nearly 5% more of its total expenditures to education than would otherwise be the case. In the fixed effects model both political competition variables are highly significant, though the *Multiparty competition* coefficient is slightly smaller than in the pooled OLS estimate. Finally, the coefficient on the *Overseas aid* variable is again negative in both regressions and highly significant in regression (3). This counterintuitive result implies that countries which receive more aid actually tend to spend less on education. In Section 7's discussion of robustness issues I consider whether this result may be attributable to the fact that the level of overseas aid may actually be endogenous to the level of education spending.

According to the fixed effects regressions (2 and 4) in Table 2, countries in which executives are elected in multiparty competition are not actually estimated to have higher levels of education spending than are countries where executives are elected in single-candidate competitions. Further observation suggests a clear reason for the difference between the OLS and fixed effects estimates. The country mean values for education spending, which are

subtracted out in the fixed effects model, are positively and significantly correlated with the *Multiparty competition* variable, and they are negatively correlated with the *Single-party competition* variable. This result is attributable above all to the fact that four countries in the sample have had both multiparty competition and high levels of education spending throughout the period considered (Botswana, Namibia, Senegal, and Zimbabwe). Given that the OLS results strongly suggest that multiparty competition has a larger effect on spending than does a move to single-party competition, the fixed effects result should not be taken as demonstrating that multiparty competition is irrelevant. The fixed effects results should instead be read as suggesting the following: we can reject the hypothesis that the observed difference between countries with elected executives and countries with unelected executives is attributable to unobserved country effects, but we cannot reject the hypothesis that the observed difference between *Multiparty competition* and *Single-party competition* is attributable to unobserved country effects.

The Table 3 regressions test Hypothesis 1, using the same specifications as in Table 2 but to investigate the determinants of government spending on primary education in particular. In regressions (1) and (2) the same pattern emerges as in the previous set of regressions. In the pooled OLS estimates the coefficient on the *Multiparty competition* variable is positive, highly significant, and larger than the coefficient on the *Single-party competition* variable. Establishing multiparty competition would be associated with an increase in primary education spending by 0.8% GDP. In the fixed effects model the coefficient on *Multiparty competition* remains statistically significant, though it is smaller in magnitude. The results are similar when considering the determinants of primary education spending, measured as a share of total government spending. In this case, however, while *Multiparty competition* is significant in the pooled OLS estimate, it is no longer significant in the fixed effects regression. Finally, the coefficient on *Overseas aid* is again negative and significant in all four regressions in Table 3.

Table 4 reports results of two regressions that test Hypothesis 2, where the dependent variable is the share of the education budget devoted to primary schools. While the regressions

in Tables 2 and 3 suggest that governments subject to multiparty competition spend more on education and more on primary education in particular, they do not indicate whether democracy has led to a reallocation of resources within the education budget, in response to a shift in the relative influence of different social groups. Regressions (1) and (2) in Table 4 fill this gap by considering whether a shift to multiparty competition is estimated to result in a reallocation of resources from secondary schools and universities toward primary schools. The results of both the OLS and the fixed effects estimates suggest that governments subject to multiparty competition will in fact devote roughly 5 percent more of their education budget to primary schools than is the case for governments that are not subject to electoral competition. It should be noted, however, that the magnitude of the coefficients on the *Single-party competition* and the *Multiparty competition* variables is similar in both regressions.

Overall, the results of the regressions in Table 2-4 provide a strong indication that governments subject to electoral competition have spent more on education, on primary education in particular, and they also tend to shift resources from secondary schools and university funding towards primary education. The next section considers to what extent to these results are robust to changes in specification, estimation method, and controls for potential biases.

7. Alternative specifications and robustness

There are a number of issues concerning the robustness of my results. These involve the accuracy of the political competition measures, the effect of potential omitted variables, the possible endogeneity of foreign aid, sample selection bias, serial correlation of error terms, and the effect of outliers. This section considers each of these potential problems in turn.

First of all, the measure of multiparty political competition that I have used may not fully reflect the degree to which presidential elections are free and open. In a number of cases where multiple candidates have contested an election, incumbents have used various means to

rig the outcome, by intimidating opponents, by voting fraud, or through other mechanisms. If failure to account for such restrictions implies a bias in my estimates, it would probably involve a bias against finding that democratic governments spend more on primary education. This would be true to the extent that one might expect governments that engaged in fraud to spend less on primary education. Rather than rely solely on this conjecture, however, I considered the problem further by repeating the regressions from Tables 2-4 while only counting as having multiparty competition those countries in which the president was elected with less than 80% of the vote. This was based on the idea that lopsided election outcomes are an indicated of restrictions on political competition. All results remained robust, as they did when I lowered the threshold to 75% and to 70%.

An additional alternative specification in my regressions involves distinguishing between countries that elect representatives based on proportional representation, and those with majoritarian electoral systems. Though the theory developed in Section 2 pertains directly to executives, rather than legislatures, it might be argued that multiparty political competition also gives individual legislators an incentive to take decisions to spend more on primary education. As a consequence, it might be important to separate out governments where there is multiparty competition and legislators are elected based on proportional representation from those governments where legislators are elected in a first past the post system. A number of studies have argued that incentives for legislators to deliver public services are much weaker in PR systems, given the weaker links between individual representatives and individual constituencies. In order to consider this possibility I re-ran the regressions from Tables 2-4 while creating two *Multiparty competition* variables – one for PR countries and one for majoritarian countries. The coefficients on both of these variables remained positive, statistically significant, and of similar magnitude in all cases (tests failed to reject the null that they were not identical).

Another possible oversight involves the effect of national wage decisions. Wages for teachers are the largest single spending item for education ministries in Africa. Given that

decisions regarding civil service wages in African countries are typically made in a centralized manner, it may be the case that education expenditures depend more on the overall remuneration policy of a government than on the priority it gives to education. To consider this possibility I re-estimated the regressions while including an additional variable that represents the average civil servant wage as a multiple of per capita GDP. Data were only available for the period after 1986 (from Leinert and Modi, 1997), resulting in the loss of a number of observations in the sample. The coefficients on the electoral competition variables remained significant in the OLS regressions though not in the fixed effects regressions. It should be noted, however, that this loss of significance is not surprising given that the sample was reduced to half its original size in these re-estimated regressions.

A fourth potential specification issue concerns my foreign aid variable. Different donors may attach different priorities to education expenditures, yet the variable used in Tables 2-4 aggregates aid from all different donors. As a result, it may obscure the effects that individual donors may have on education policies. To consider this possibility I re-estimated the regressions while substituting net aid flows from the World Bank for the overall aid variable. The World Bank has been particularly vocal of late in calling for governments to prioritize education expenditures. Interestingly, the coefficient on the World Bank aid variable was always negative and significant in the OLS regressions and negative and generally significant in the fixed effects regressions.

One further concern with my foreign aid variable is that it might not be pre-determined. Foreign aid might be endogenous to education spending to the extent that countries that spend more on education might subsequently have less need for foreign aid if they enjoy high rates of growth. Likewise, foreign aid might be endogenous if donors give higher levels of assistance to governments that have a track record of prioritizing education. To deal with this issue I estimated a fixed-effects model where I instrumented for *Overseas aid* using lagged values. The results with regard to political competition were essentially unchanged. In addition, the

coefficient on foreign aid remained statistically significant and it was actually more negative than in the fixed effects model without instruments. With this said, interpretations of this result may be complicated by the fact that data on education spending for some countries may not include donor-financed expenditures.

In addition to possible omission or misspecification of relevant variables, given the large number of missing observations in my dataset, there also exists the possibility that the results reported in Tables 2-4 are subject to a sample selection bias. For example, it might be the case that governments in less democratic countries, or in poorer countries, are less likely to provide data on education expenditures. This would be particularly problematic to the extent that a country's likelihood of providing data is correlated with my key explanatory variables regarding political competition. I was able to rule out this possibility for both the data on overall education expenditures and primary education expenditures. The variable *Multiparty competition* is only very weakly correlated with the probability of a government not providing overall education data (-0.03) and even more weakly correlated with the probability of not providing primary education data (0.004).

I also considered whether the results reported in Tables 2-4 are affected by serial correlation of the error terms. When I re-estimated the regressions from Tables 2-4, including an AR1 term, the results with regard to the coefficients on *Multiparty competition* and *Overseas aid* were largely unchanged. However, one of the potential pitfalls in dealing with serial correlation by estimating an AR1 term is that in datasets with relatively short time-series, estimates of the autocorrelation parameter are likely to prove imprecise. As a result, Bertrand, Duflo, and Mullainthan (2002) have suggested an alternative method of identifying whether results are biased by serial correlation. This method provides an estimate of the effect of multiparty competition on education spending that is not biased by serial correlation, since it ignores the

time-series dimension of the data. Using this method my results also remained significant.[31]

As a final robustness issue, I investigated the possibility that the results presented above were influenced by outliers. In the Table 2-4 estimates the only significant change after exclusion of outliers (identified based on dfbeta values) involved the coefficient on the *Single-party competition* variable which in regression 1 from Table 2 and 3 from Table 3 became smaller in magnitude and less significant.

8. Conclusion

Though the arrival of multiparty democracy has failed to trigger a wholesale revision of economic policies in African countries, in this paper I have argued that this lack of a general transformation may nonetheless obscure important changes in individual policy areas. multiparty democracy may logically give African leaders a greater incentive to cater to the demands of rural groups, and in the area of education, African rural groups are concerned above all with primary schooling. I have developed this hypothesis with a simple game-theoretic model that does not depend upon the assumption that election outcomes are always respected. Results of cross-country regressions show that governments subject to competition have in fact spent more on education and more on primary education in particular. As a result, it appears that the introduction of electoral competition can have an impact on policy even in environments where democratic procedures may be imperfect and where institutions may be unstable.

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[31] Following their method, I first regressed each of my education spending variables on a set of country dummies and on all covariates in my regression with the exception of the *Multiparty competition* dummy variable. Then, retaining the residuals for those countries in my dataset for which there was a shift towards multiparty competition, I collapsed the data into two time periods: *Before multiparty competition* and *After multiparty competition*. I then regressed the residuals on an *After multiparty competition* dummy.

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Table 1: Summary statistics on education spending

	Nobs	Mean	Within country stdev	Between country stdev	Min.	Max.
Government spending on education %GDP	324	4.12	0.86	1.91	0.37	10.3
Government spending on primary education % GDP	188	1.93	0.35	1.04	0.34	5.17
Govt spending on education as % of total spending	324	16.3	5.1	3.5	2.6	29.2
Govt spending on primary education as % of total spending	188	7.6	1.4	3.2	1.5	15.7
Share of education budget devoted to primary schools	188	0.43	0.05	0.13	0.14	0.87

Figure 1: Trends in government spending on education
(African averages)

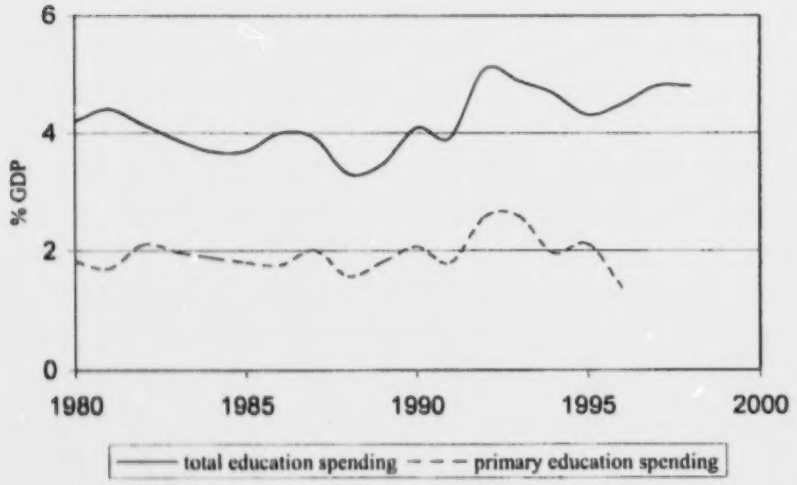


Figure 2: Trends in the openness of political competition

(Percent of countries where executive elected in multiparty competition)

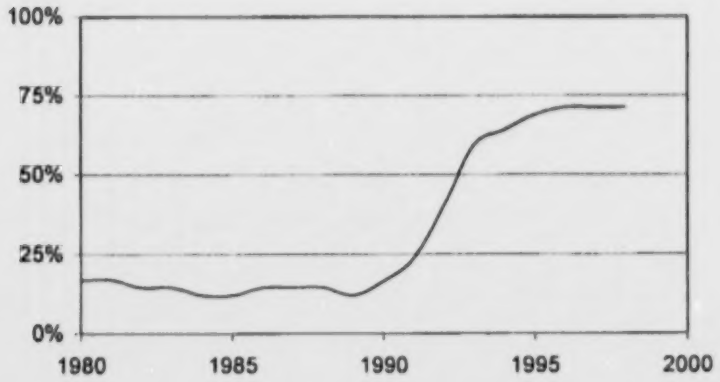


Table 2: Electoral competition and overall government spending on education

Spending measure →	% GDP		% total govt. spending	
	OLS	Fixed effects	OLS	Fixed effects
	(1)	(2)	(1)	(2)
Single-party competition	.286*	.789***	1.14	3.20**
	(.164)	(.216)	(0.85)	(1.30)
Multiparty competition	1.42***	.645***	4.73***	3.84***
	(.285)	(.192)	(0.96)	(1.15)
Election year	-.179	.076	-.657	-.259
	(.153)	(.097)	(.587)	(.584)
Election previous year	-.243	-.043	-.640	-.456
	(.168)	(.096)	(.662)	(.581)
Election next year	-.128	.101	-.490	-.118
	(.171)	(.090)	(.519)	(.541)
Per capita GDP (log)	.903***	.211	1.11***	1.97**
	(.149)	(.149)	(.428)	(0.89)
Aid (%GDP)	-.013	-.025***	-.188***	-.102*
	(.008)	(.009)	(.035)	(.055)
Constant	-1.64*	2.60***	10.4***	3.33
	(0.96)	(0.91)	(3.21)	(5.50)
N=	324	324	324	324
R^2	0.31	0.13	0.23	0.18
H_0:single-party=multiparty	p<0.01	p=0.46	p<0.01	p=0.59

Standard errors in parentheses (panel corrected standard errors for OLS. *, **, and *** refer to significance at the 10%, 5%, and 1% levels respectively).

Table 3: Electoral competition and government spending on primary education

Spending measure →	% GDP		% total govt. spending	
	OLS	Fixed effects	OLS	Fixed effects
	(1)	(2)	(1)	(2)
Single-party competition	.427***	.297**	1.22***	.901*
	(.158)	(.134)	(0.50)	(.522)
Multiparty competition	.837***	.254**	2.14***	.714
	(.199)	(.131)	(0.38)	(.512)
Election year	-.006	-.008	.031	.036
	(.115)	(.059)	(.326)	(.228)
Election previous year	.176*	.005	.801***	.159
	(.105)	(.056)	(.317)	(.220)
Election next year	.170*	.096*	1.06***	.378
	(.092)	(.057)	(0.36)	(.222)
Per capita GDP (log)	.450***	-.067	.317	-.741
	(.065)	(.164)	(.213)	(.641)
Aid (%GDP)	-.026***	-.011**	-.171***	-.036*
	(.006)	(.005)	(.023)	(.020)
Constant	-.973**	2.25**	6.20***	11.8***
	(.410)	(1.00)	(2.21)	(3.91)
N=	188	188	188	188
R^2	0.39	0.09	0.38	0.02
H_0:single-party=multiparty	p<0.01	p=0.74	p=0.04	p=0.72

Standard errors in parentheses (panel corrected standard errors for OLS. *, **, and *** refer to significance at the 10%, 5%, and 1% levels respectively).

Table 4: Electoral competition and the share of the education budget devoted to primary schools

	OLS (1)	Fixed effects (2)
Single-party competition	**.075*** **(.018)**	**.052** **(.020)**
Multiparty competition	**.053** **(.025)**	**.049** **(.020)**
Election year	.017 (.015)	.000 (.009)
Election previous year	.039** (.017)	.004 (.009)
Election next year	.046*** (.016)	.020** (.009)
Per capita GDP (log)	-.015 (.011)	-.018 (.025)
Aid (%GDP)	-.004*** (.001)	-.0002 (.0007)
Constant	.504*** (.064)	.503*** (.152)
N=	188	188
R^2	0.23	0.09
H_0:single-party=multiparty	p=0.13	p=0.87

Standard errors in parentheses (panel corrected standard errors for OLS. *, **, and *** refer to significance at the 10%, 5%, and 1% levels respectively).

Table 5: Countries included in the dataset and levels of political competition

Country	Year	Competition	Country	Year	Competition
Angola	1985-87, 1990	None	Kenya	1981-91	Single Party
Benin	1995	Multiparty		1992-96	Multiparty
Botswana	1981-1996	Multiparty	Madagascar	1981-85, 1987-92	Single Party
Burkina Faso	1981-1990	None		1993	Multiparty
	1991-1994	Single Party	Malawi	1981-93	Single Party
Burundi	1981, 1987-92	None		1994	Multiparty
	1985-86	Single Party	Mali	1981-88	Single Party
	1994-96	Multiparty		1995-96	Multiparty
Cameroon	1981-91	Single Party	Mauritania	1991	None
Cen Afr Rep	1984-85	None		1992-95	Multiparty
	1986-1991	Single Party	Mozambique	1982-90	None
Chad	1991, 1994	None	Namibia	1990-96	Multiparty
Congo, Dem Rep	1981-88	Single Party	Niger	1989-90	Single Party
Congo, Rep	1981-84, 1989-91	None		1991-92	None
	1992-95	Multiparty		1993-96	Multiparty
Côte d'Ivoire	1992-96	Multiparty	Nigeria	1981-83	Multiparty
Eq. Guinea	1988, 1993	None		1984-95	None
Ethiopia	1983-86	None	Rwanda	1981-84, 1986-89	Single Party
	1987-94	Single Party	Senegal	1981-84, 1990, 1992-94	Multiparty
	1995-96	Multiparty	Sudan	1983-84	Single Party
Gabon	1984-87, 1992	Single Party		1985	None
	1994-95	Multiparty		1986-88	Multiparty
Gambia	1981-85, 88, 90-91, 93	Multiparty		1989-91	None
	1994-96	None	Swaziland	1981-82, 1985-96	None
Ghana	1981	Multiparty	Togo	1981-87, 1988-90, 1992	Single Party
	1984-90	None		1996	Multiparty
	1992-96	Multiparty	Uganda	1984	Multiparty
Guinea	1988-89, 1991-92	None		1987, 1989-91, 1994-95	None
	1993-96	Multiparty	Zambia	1981-90	Single Party
Guinea-Bissau	1987	Single Party		1991-95	Multiparty
			Zimbabwe	1981-93	Multiparty

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